CLAIMS

1. A DNA library for the production of a library of double stranded RNA molecules of a predefined length in the range of 10-30 base pairs in living cells, wherein the se- quence (s) of the DNA region (or regions) encoding the double stranded part of dou- ble stranded RNA molecule (s) is randomized in all nucleotide positions, and wherein both strands of said double stranded RNA molecule is produced from a single mem- ber of the DNA library.

2. A DNA library for the production of a library of double stranded RNA molecules of a predefined length in the range of 19-30 base pairs in living cells, wherein the se- quence (s) of the DNA region (or regions) encoding the double stranded part of dou- ble stranded RNA molecule (s) is randomized in at least 19 nucleotide positions, and wherein both strands of said double stranded RNA molecule is produced from a single member of the DNA library.

3. A DNA library for the production of a library of double stranded RNA molecules of a predefined length in the range of 15-30 base pairs in living cells, wherein the se- quence (s) of the DNA region (or regions) encoding the double stranded part of dou- ble stranded RNA molecule (s) is randomized in at least 15 nucleotide positions, and wherein both strands of said double stranded RNA molecule is produced from a single member of the DNA library.

4. A DNA library for the production of a library of double stranded RNA molecules of a predefined length in the range of 10-30 base pairs in living cells, wherein the se- quence (s) of the DNA region (or regions) encoding the double stranded part of dou- ble stranded RNA molecule (s) is randomized in at least 4,7 or 10 nucleotide posi- tions, and wherein both strands of said double stranded RNA molecule is produced from a single member of the DNA library.

5. A DNA library for the production of a library of double stranded RNA molecules of a predefined length in the range of 10-30 base pairs in living cells, wherein the se- quence (s) of the DNA region (or regions) encoding the double stranded part of dou- ble stranded RNA molecule (s) is randomized in 4 to all nucleotide positions, and wherein both strands of said double stranded RNA molecule is produced from a single member of the DNA library.

6. A DNA library of any of the claims 1 to 5, wherein said double stranded RNA molecules also contain single stranded region (s) at one end or both ends of the molecules.

7. The DNA library of any of the claims 1 to 6, wherein each member of the

DNA li- brary contains one promoter for transcription of the double stranded RNA mole- cules and one terminator for transcription of the double stranded RNA molecules, and wherein the double stranded RNA is formed as a hairpin type double stranded molecule

8. The DNA library any of the claims 1 to 6, wherein each member of the DNA li- brary contains at least two promoters for transcription of the components of the double stranded RNA molecules and two terminators for transcription of the components of the double stranded RNA molecules, and wherein the double stranded RNA is formed by two separate RNA molecules that are complementary to each other in the double stranded region.

9. The DNA library of claims 1 to 8, wherein the DNA library is constructed within a plasmid vector.

10. The DNA library of claims 1 to 8, wherein the DNA library is constructed within a viral vector.

11. A DNA library of claims 1 to 10 wherein the randomness of the library was modified by selection of the random DNA oligonucleotides, before cloning the said random DNA oligonucleotides into the vectors, through hybridization to a total RNA preparation or total MRNA preparation from a source, whereby only the oligonucleotides hybridized to the source RNA (or MRNA) are subsequently cloned into the vector, and wherein the source can be a cell, a cell line, a tissue, or a organism.

12. A kit containing the DNA library of any of the claims 1 to 11.

13. A method of constructing a DNA library of any of the claims 1 to 6, and 8 to 11 wherein a pair of mutated H1 promoters are placed in opposite directions to drive the RNA expression from the DNA fragment inserted between the two promoters, wherein the said mutated H1 promoter differs from the wild type H1 promoter in at least the sequence of the 5-nucleotide region immediately ahead of the transcription starting site. The said 5-nucelotide region of the mutated H1 promoter is AAAAA.

14. An RNA library obtained from the DNA library of any of the claims 1-12, wherein the length of double stranded RNA produced is in the range of 10 to 30 nucleotides.

15. A method of using the DNA libraries of any of the claims 1 to 12, wherein the library is transiently or permanently introduced into cells as a mixture.

16. A method of using the DNA library of claims 1 to 12 to screen for double stranded RNA with biological functions.

17. A method of using the DNA library of claims 1 to 12 to screen for novel genes.

18. A novel gene obtained by the methods of any of the claims 15 to 17.

19. A novel function of a gene obtained by methods of any of the claims 15 to 17.

20. A pharmaceutical composition obtainable by the methods of any of the claims 15 to 17.

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